



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/520,544	07/01/2005	Patrick Golden	758,1491USWO	9289
23552	7590	05/21/2009	EXAMINER	
MERCHANT & GOULD PC P.O. BOX 2903 MINNEAPOLIS, MN 55402-0903			CHRISTIAN, MARJORIE ELLEN	
ART UNIT	PAPER NUMBER			
			1797	
MAIL DATE	DELIVERY MODE			
			05/21/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/520,544	<b>Applicant(s)</b> GOLDEN ET AL.
	<b>Examiner</b> MARJORIE CHRISTIAN	<b>Art Unit</b> 1797

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 07 April 2009.
- 2a) This action is FINAL.      2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 37-47 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 37-47 is/are rejected.
- 7) Claim(s) 38-47 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO/SB/08)  
 Paper No(s)/Mail Date \_\_\_\_\_
- 4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date \_\_\_\_\_
- 5) Notice of Informal Patent Application  
 6) Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Summary***

1. This is the initial Office action based on the application filed 1/5/2005.
2. The amendment filed 4/7/2009 has been entered and fully considered
3. Claims 37-47 are pending and have been fully considered.

### ***Information Disclosure Statement***

4. The information disclosure statement filed 4/29/2005 fails to comply with 37 CFR 1.98(a)(2), which requires a **legible copy of each cited foreign patent document** (JP4030612); each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information lined through has not been considered, all other items have been fully considered.

### ***Examiner Initiated Interview Summary***

5. In an interview with Ms. Julie Daulton on 5/18/2009, Ms. Daulton indicated that the intended dependency of Claims 38-47 is as follows:

All claims depending from the claim 1 were intended to depend from claim 37; Claim 40 depends from claim 39; Claim 41 depends from claim 40; and Claim 45 depends from claim 45.

For the purposes of examination this is how the claim dependency will be interpreted.

***Claim Objections***

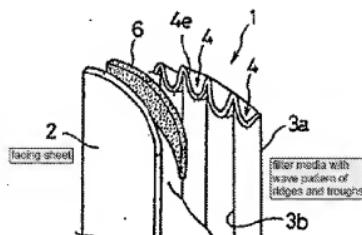
6. Claims 38-47 depend on cancelled claims (Claims 1, 3-4, 8), therefore it is unclear what claims 38-47 are intended to further limit and depend on.

***Claim Rejections - 35 USC § 102***

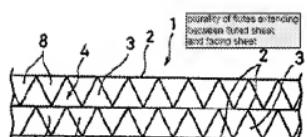
7. Claims 37-42, 44-47 are rejected under 35 U.S.C. 102(b) as being anticipated by JP1171615, KADOYA et al. (hereinafter KADOYA).

As to Claim 37, KADOYA discloses a fluted filter media construction (Figs. 1, 3-4 comprising: fluted sheet of filter media (see Figs. 1, 3-4 below); facing sheet of filter media (Fig. 1, 4, Ref. 2) adhered to the fluted sheet forming a plurality of flutes (3); the plurality of flutes extending between the fluted sheet and the facing sheet comprise a regular fold arrangement (4), sealing the plurality of flutes to the passage of unfiltered air (Pg. 9, Para. 2), and it appears that the regular fold arrangement (Fig. 1, 3) comprises an inverted ridge with a remaining portion folded against the inverted ridge (Fig. 3, Pg. 7-Pg. 8),

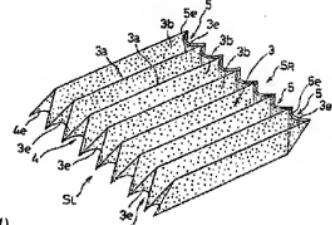
Art Unit: 1797



(Fig. 1)



(4)



(3)

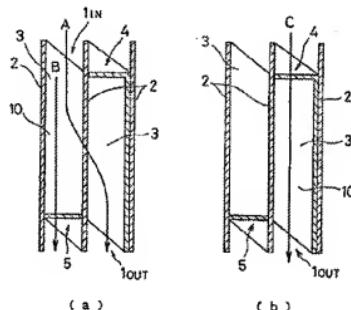
As to Claim 38, KADOYA discloses the adhesive adheres the first layer to the facing media and the second layer to the first layer (Pg. 8, Para. 1).

folding parts 4,5 as indicated in Figure 1 and Figure 2,  
flat filter mediuma 2,2 which are reciprocal and adjacent

/  
to corrugated filter medium 3 are such that a sealing part  
7 is formed by joining using bonding agent 6. This sealing  
part 7 is formed when end surfaces 4e, 5e of folding parts  
4,5 of corrugated filter medium 3 and the surface 2a which  
is opposite the flat filter medium 2 adhere closely to one  
another.

Art Unit: 1797

As to Claim 39, KADOYA discloses the plurality of flutes extend from a first face to a second face, and the fold arrangement is provided at one of the first face or the second face (Fig. 5).



As to Claim 40, KADOYA discloses the fluted sheet and the facing sheet are coiled into a coiled media structure (Fig. 6, 7).

As to Claim 41, KADOYA discloses the coiled media structure (Fig. 6-7) comprises the plurality of flutes having a regular fold arrangement sealing the plurality of flutes to the passage of unfiltered air (Fig. 3, Ref. 4, 5). KADOYA also discloses using a sealing packing material for flutes (Fig. 12, Ref. 23), where it is implicit that one end is packed using the packing sealing material to seal the flutes to the passage of air, absent evidence to the contrary.

As to Claim 42, KADOYA discloses the fluted sheet of filter media comprises a regular, curved, wave pattern of flutes (Fig. 3).

As to Claims 44-45, KADOYA discloses the fluted sheet and the facing sheet are positioned in a filter to define a set of inlet flutes and a set of outlet

Art Unit: 1797

flutes extending between an inlet face and an outlet face (Fig. 5); each inlet flute being closed (5) to passage of unfiltered fluid there through, adjacent said outlet face (1out); and each outlet flute being closed (4) to passage of unfiltered fluid therein, adjacent said inlet face (1in); the inlute flute closed by the regular fold arrangement (Fig. 3, Ref. 4, 5).

As to Claim 46, KADOYA discloses the inverted ridge is a result of inverting the ridge of the fluted sheet at its apex (Fig. 1, 4, 4e, Pg. 8, Para. 1).

As to Claim 47, it is implicit that the regular fold arrangement is provided as a result of a mid web-folding process, absent evidence to the contrary. Further, providing the regular fold arrangement by mid web-folding process does not structurally differentiate the folds from other processes of creating regular fold arrangements. While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. *In re Schreiber*, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997).

#### ***Claim Rejections - 35 USC § 103***

8. Claims 43 is rejected under 35 USC 103 (a) as being obvious over JP1171615, KADOYA et al. (hereinafter KADOYA) in view of US Patent No. 5,435,958, DINNAGE et al. (hereinafter DINNAGE).

As to Claim 43, KADOYA discloses the fluted filter media comprising a fluted sheet with a pattern of ridges and troughs. KADOYA does not appear to explicitly disclose the flute to flat ratio in the fluted sheet. However, at the time of

Art Unit: 1797

the invention it would be obvious to a person having ordinary skill in the art to optimize the flute to flat ratio in the fluted sheet membrane to improve the filtration efficiency of the filter media, as disclosed by DINNAGE. DINNAGE discloses a fluted filter media (Fig. 1) with a flute height/ pitch ratio of about 0.2 to 2.0 (C2/L49-54) to enhance efficiency, which encompasses the instant range disclosed. Therefore, the invention as a whole would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made.

### ***Conclusion***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARJORIE CHRISTIAN whose telephone number is (571)270-5544. The examiner can normally be reached on Monday through Thursday 7-5pm (Fridays off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vickie Kim can be reached on (571)272-0579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1797

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MC

/Krishnan S Menon/  
Primary Examiner, Art Unit 1797